

REMARKS

Claims 1-10 and 12-18 are pending in this application. No claims are withdrawn from consideration as being drawn to a non-elected Species. By this Amendment, claim 11 is cancelled without prejudice to or disclaimer of the subject matter contained therein, and the specification and claims 1-10 and 12-16 are amended, and claims 17 and 18 are added. Claim 1 is amended to incorporate features from claim 11 and by features supported in the specification at paragraph [0053]. New claims 17 and 18 recite features supported in the specification as exemplified by the bar code reader 316, and by judging means at step S409. No new matter is added by any of these amendments.

Reconsideration based on the following remarks is respectfully requested.

I. The Election of Species Requirement is Improper

The Office Action makes final the Election of Species Requirement issued December 12, 2003. Applicants respectfully submit that this Requirement is improper.

The Office Action alleges that claim 8 does not define any additional structure relative to claim 1, and concludes that it would not arguably appear that claim 1, or any claim dependent therefrom to be generic relative to Species A and B. However, Applicants respectfully assert that claim 8 recites the “feeder indicator”, whereas the operator assisting apparatus recited in claim 1 lacks this feature. Thus, Applicants assert that claim 8 defines an additional structure relative to claim 1, from which it depends. Further, the feeder indicator is not readable on Species A, but is readable on Species B.

In addition, Applicants assert that claims 1-10 and 11-16 are readable on elected species B, and that claims 1-7, 12-14 and 16 are additionally readable on non-elected Species A, and accordingly are generic to both Species A and B. Thus, at least claim 1 is generic to species A and B. The features incorporated from claim 11 into claim 1 are readable on Species B. Withdrawal of the election of species requirement is respectfully requested.

II. The Claims Satisfy the Requirements under 35 U.S.C. §112, second paragraph

The Office Action rejects claims 1-16 under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1-10 and 12-16 have been amended has been amended to obviate this rejection in view of the Examiner's helpful comments. The apparatus recited in claim 1 includes (1) next operation determining means and (2) a position indicator, a feeder indicator or both position and feeder indicators. The next operation determining means is supported in the specification by examples described in the specification. In particular, these include sensors (474, 500), and the computer (300) that processes their signals

With respect to claims 2, 4 and 6-8, Applicants respectfully submit that these claims recite additional structure relative to claim 1 or any intervening claims, as explained above. For example, an operator assisting apparatus does not recite a position indicator, whereas this feature is recited in claim 2, thus presenting an additional structure relative to claim 1. Similarly the other dependent claims also recite additional features.

Regarding claims 7 and 10, the term "mode" has been replaced with --manner--, so as to be consistent with the features recited in claim 5. Further, the respective operations in claims 5, 7, 9 and 10 have been amended from ordinal designations "first", "second", "third",... to descriptive --last-mounting--, --non-mounting--, --removing--,... identifications.

In addition, claim 7 recites that a removing position checking and indicating device is operable to control the feeder indicator,... such that the feeder indicator is operable in an intermediate manner,... and in a non-intermediate manner. These features are supported in the specification as steps S406, S407 and S408 of the control program shown in Fig. 14, as executed by the computer 300. Claim 10 recites that an intermediate operation checking and indicating device is operable... to control the feeder indicator to be operable in a needing manner,... and non-needing manner. These features are supported in the specification as steps S204, S205, S305 and S306 of the control program shown in Figs. 12 and 13, as

executed by the computer 300. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph is respectfully requested.

III. Claims 1-10 and 12-18 Define Patentable Subject Matter

The Office Action rejects claims 1-16 under 35 U.S.C. §102(b) or in the alternative under 35 U.S.C. §103(a) over U.S. Patent 6,099,598 to Yokoyama *et al.* (hereinafter “Yokoyama”) or to U.S. Patent 5,283,943 to Aguayo *et al.* (hereinafter “Aguayo”). These rejections are rendered moot with respect to claim 11, and are respectfully traversed with respect to the remaining claims.

Neither Yokoyama nor Aguayo teaches or even suggests an operator assisting apparatus for assisting an operator of an electric-component supply device including a plurality of component feeders and a feeder support on which the component feeders are mounted at respective feeder-mounting positions, each of the component feeders accommodating a plurality of electric components of a specific kind and being arranged to successively supply the electric components one after another, the electric-component supply device being arranged to supply from the component feeders, the electric components to an electric-component mounting device which is arranged to mount the electric components on at least one printed wiring board, the operator assisting apparatus being arranged to assist the operator in performing at least one manual working operation selected from the group consisting of (i) an operation to mount each one of the component feeders on the feeder support, (ii) an operation to remove said each one of the component feeders from the feeder support, and (iii) an intermediate operation to be performed in connection with said each one of the component feeders, during a time period between moments of respective operations to mount and remove said each component feeder on and from the feeder support, the operator assisting apparatus including next-operation determining means for determining, based on an operating state of at least one of the electric component supply device and the electric component mounting device, the manual working operation which should be performed next

by the operator, and the component feeder for which the determined manual working operation should be performed next, the determined manual working operation being one of the operation to mount the determined component feeder on the feeder support, the operation to remove the determined component feeder from the feeder support, and the intermediate operation in connection with the determined component feeder; at least one of (a) a position indicator operable to indicate at least one of (i) the feeder-mounting position at which the determined component feeder is to be mounted next on the feeder support and (ii) the feeder-mounting position at which the determined component feeder has been removed last from the feeder support, and (b) a feeder indicator operable to indicate at least one of (i) the determined component feeder which has been mounted last on the feeder support, (ii) the determined component feeder which is to be removed next from the feeder support and (iii) the determined component feeder on which the intermediate operation is required to be performed, as recited in claim 1.

Instead, Yokoyama discloses a wafer fabrication processing apparatus with a database for managing progress information. In particular, Yokoyama teaches a wafer transporter 101, a metal film depositor 102, an insulator film depositor 103, a lithographer 104, a stocker 105, a metal dry etcher 106, an insulator dry etcher 107 and a loader/unloader 108 (col. 12, lines 3-9 and Fig. 1 of Yokoyama)

Applicants respectfully assert that Yokoyama teaches a plurality of processing apparatuses 102 through 108 connected to each other by a transporter 101. Yokoyama teaches that each of the processing chambers 102-108 has a mechanism for identifying the type and processing content of the wafer placed therein (col. 25, lines 36-45 of Yokoyama). Further, Yokoyama teaches that the processing chamber includes a mechanism for reading a laser mark previously disposed on the rear surface of each wafer, and that before each wafer is processed, the read-out mark is verified by a managing system by way of a computer for

controlling the processing apparatus, thereby identifying the type and the processing content of the wafer.

However, Yokoyama fails to teach or suggest providing an operator assisting apparatus, as provided in Applicants' claimed features. Yokoyama teaches an automated fabrication system for processing a wafer, but does not assist an operator in performing a manual working operation related to a component feeder as part of an electric-component supply device. In addition, Yokoyama does not teach or suggest providing all of the features of Applicants' claims. Rather, Yokoyama teaches reading a laser mark previously provided on the rear surface of each wafer, and thereby identifying the type and processing content of the wafer. There is no teaching or suggestion in Yokoyama of the next-operation determining means for determining, based on an operating state of an electric-component supply device and/or an electric-component mounting device, of a manual working operation which should be performed subsequently, or a component feeder for which the determined manual working operation should be performed next, or a position indicator and/or a feeder indicator, in contrast to Applicants' claimed features.

Further, Aguayo discloses an automated assembly apparatus. In particular, Aguayo teaches an automated assembly machine 101 that retrieves components 106 from locations 107. Aguayo further teaches an information processor 108 that communicates with a component identifier 103 and a position indicator 102 (col. 3, line 45 – col. 4, line 18, col. 5, lines 13-25 and Fig. 1 of Aguayo).

Applicants explain that Aguayo further teaches a reading device 201, a computer 202, and a disabling device 109, and that upon determining that the assembly machine 101 has no compartments 106 loaded, the loading phase will begin, with the computer 202 prompting the machine operator to use the reading device 201 to identify the component 106 (col. 8, lines 10-26 and Figs. 1 and 2 of Aguayo). The operator in Aguayo scans the component 106, and if the scan was successful, the computer 202 will determine the proper location 107 of the

identified component 106 by activating the position indicator 102 adjacent to the loading location 107. Consequently, Aguayo teaches operating the indicator 102 to determine the proper location 107, at which the component 106 is to be mounted. However, Aguayo fails to teach or suggest providing next operation determining means, as provided in Applicants' claimed features, because the computer 202 of Aguayo determines the proper location 107 corresponding to the type of component 106 identified by the component identifier 103. Aguayo lacks any determination of a proper location 107 based on an operating state of the assembly machine 101 and/or the component 106.

Further, Aguayo teaches that if any sensing device 105, other than that indicated, senses a component 106, then the computer 202 instructs the machine operator to remove the detected component 106, in order to check for misplacement of the component (col. 8, lines 51-58 of Aguayo). In this case however, Aguayo fails to teach or suggest a concrete manner in which the computer 202 instructs the machine operator to remove the detected component. Specifically, Aguayo does not expressly teach or suggest indicating the loading location 107 where the wrong component 106 has been mounted by activating the position indicator 102 adjacent to that location 107. If the wrong location 107 is indicated by the position indicator 102, then the machine operator might confuse the wrong location 107 with the proper location 107. In addition, the computer 202 instructs the machine operator to remove the detected wrong component 106, based on the sensing device 105 associated with the wrong location 107, but fails to determine the wrong location 107 or the wrong component 106 based on an operating state of the assembly machine 101 or the components 106.

Moreover, Aguayo teaches that during production, one or more components 106 are likely to become empty, at which time any automatic assembly machine 101 will cease operating (col. 8, lines 51-58 of Aguayo). Thus, by necessity, the machine operator will remove an empty component 106, and as soon as any component 106 is removed, a sensor 105 will so indicate, and the computer 202 will become aware. However, in this case,

Aguayo does not expressly teach or suggest indicating the empty component 106 by activating the position indicator 102 adjacent to that component 106 mounted on the loading location 107. Further, Aguayo fails to expressly teach or suggest instructing the machine operator to remove the empty component 106, but merely teaches that the assembly 101 ceases to operate.

In each of the above indicated cases, Aguayo fails to teach or suggest providing at least the next operation determining means as recited in Applicants' claims.

A claim must be literally disclosed for a proper rejection under §102. This requirement is satisfied "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" (MPEP §2131). Applicants assert that the Office Action fails to satisfy this requirement with either Yokoyama or Aguayo. The cursory assertions in the Office Action do not provide justification of the anticipation rejection with either of the applied references.

A *prima facie* case of obviousness for a §103 rejection requires satisfaction of three basic criteria: there must be some suggestion or motivation either in the references or knowledge generally available to modify the references or combine reference teachings, a reasonable expectation of success, and the references must teach or suggest all the claim limitations (MPEP §706.02(j)). Applicants assert that the Office Action fails to satisfy these requirements with Yokoyama and Aguayo.

"To imbue one of ordinary skill in the art with knowledge of Applicant's invention, when no prior art reference or references of record convey or support that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against the teacher." *W. L. Gore v. Assoc. of Garlock Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1993). Based on the lack of supporting citations of Yokoyama and Aguayo, Applicants conclude that the Office Action rejections are based on hindsight, and have an unjustified basis.

For at least these reasons, Applicants respectfully assert that the independent claims are now patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicants respectfully request that the rejections under 35 U.S.C. §§102 and 103 be withdrawn.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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